

WHAT IS CLAIMED IS:

1. A hinge comprising:
  - a first leaf having a gear segment;
  - a second leaf having a gear segment that meshes with the gear segment of the first leaf;
  - a cap fitted over and behind the gear segments to prevent the gear segments from separating;
  - a first pivot member mounted in a fixed position with respect to the first leaf;
- 10 a second pivot member mounted in a fixed position with respect to the second leaf and cooperating with the first pivot member obscure a region of the interior of the cap;
  - a conductor extending from the first pivot member to the second pivot member through the region of the interior of the cap that is obscured by the cooperating first and second pivot members.
- 15 2. A hinge according to claim 1 wherein the first and second leaves have cutouts which extend into and open out of their gear segments, and the first pivot member is in the cutout of the first leaf and the second pivot member is in the cutout of the second leaf.
- 20 3. A hinge according to claim 2 wherein the conductor is an individual stranded wire.
4. A hinge according to claim 2 wherein the conductor is within a ribbon-like wire.

5. A hinge according to claim 2 and further comprising connectors at the ends of the conductor, with the connectors being located behind the pivot members.

6. A hinge according to claim 2 wherein the first and second pivot  
5 members have meshing gear segments which obscure the region of the interior of the cap through which the conductor extends.

7. A hinge according to claim 6 wherein each pivot member includes a face plate and a backing plate; wherein the gear segments for the pivot members are on the face plate: and wherein the conductor passes between the face and  
10 backing plates for each pivot member.

8. A hinge according to claim 7 wherein the face plate of the first pivot member is flush with the first hinge leaf and the face plate of the second hinge member is flush with the second leaf.

9. A hinge according to claim 6 wherein the gear segments on the first  
15 and second pivot members align with the gear segments on the first and second leaves, but are separated from the gear segments of the leaves by pockets, and wherein a bearing block occupies the pockets, the block extending across the ends of the gear segments at the pockets to prevent the hinge leaves from shifting longitudinally with respect to each other.

20 10. A hinge comprising:

a first leaf having a plate and a gear segment along one side of the plate and also having a cutout in the plate and gear segment, with the cutout interrupting the gear segment;

a second leaf having a plate and a gear segment and also having a cutout in its plate and gear segment with the cutout interrupting its gear segment, the gear segment of the second leaf meshing the gear segment of the first leaf; the cutout in the second leaf along the gear segment of the second leaf opening 5 into the cutout in the first leaf along the gear segment in the first leaf;

a cap extended over and behind the gear segments of the first and second leaves to maintain the gear segments meshed, while still allowing one leaf to pivot relative to the other leaf, the cap having a channel-like interior;

a first pivot member in the cutout of the first leaf;

10 a second pivot member in the cutout of the second leaf, the second member cooperating with the first member to obscure the interior of the cap in the region of the cutouts in the leaves;

15 an electrical conductor attached to the first and second pivot members and between the pivot members extending through interior of the cap in the region of that interior which is obscured by the cooperating first and second pivot members;

11. A hinge according to claim 10 wherein the first and second pivot members have meshing gear segments which align with the meshing gear segments of the leaves, and the meshing gear segments of the pivot members 20 obscure the interior of the cap and the conductor which extends through that interior.

12. A hinge according to claim 11 wherein the conductor is within a ribbon which forms a loop in the interior the cap.

13. A hinge according to claim 11 wherein the conductor is one of several stranded wires.

14. A hinge according to claim 11 wherein each pivot member has a face plate on which the gear segment for the member is located and a backing plate behind the face plate; and wherein the conductor extends between the face and backing plates of each pivot member.

15. A hinge according to claim 11 wherein the gear segments on the pivot members are spaced from the gear segments on the leaves to form a pocket; and further comprising a bearing block in the pocket.

10 16. In combination with a door frame having a hinge jamb and a door, a gear hinge for supporting the door on the door frame, said gear hinge comprising:

15 a jamb leaf mounted on the hinge jamb and having a gear segment along one of its sides and also a cutout and a pocket, both of which interrupt the gear segment;

20 a door leaf attached to the door and having a gear segment and a cutout and pocket, both of which interrupt the gear segment, the gear segment of the second leaf meshing with the gear segment of the first leaf, the cutout of the second leaf opening into the cutout of the first leaf, the pocket of the second leaf opening into the pocket of the first leaf;

a cap extended over and behind the meshed gear segments to prevent the leaves from separating while enabling the hinge leaf to pivot on the jamb leaf;

a bearing block in the pockets to prevent the door leaf from moving longitudinally on the jamb leaf;

a first pivot member in the cutout of the jamb leaf;

a second pivot member in the cutout of the door leaf and configured

5 to complement the first pivot member such that the region of the cap behind the pivot member is obscured and inaccessible; and

an electrical conductor attached to the first and second pivot members and extending through the interior of the cap where it is obscured by the cap and by the complemental pivot sections.

10 17. The combination according claim 16 wherein the first pivot member is secured to the hinge jamb and the second pivot member is secured to the door.

15 18. The combination according to claim 16 wherein the first pivot member has a gear segment which aligns with the gear segment of the jamb leaf and the second pivot member has a gear segment which aligns with the gear segment on the door leaf; and wherein the gear segments on the pivot members mesh to obscure and render inaccessible the conductor.

20 19. A hinge according to claim 18 wherein the ends of the meshing gear segments on the leaves are spaced from the ends of the meshing gear segments on the pivot members to form pockets along the gear segments and further comprising a bearing block in the pockets.